IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A medical information transmitter comprising:

A) a data interface for acquiring a medical data file having an application entity title;

B) an assembly unit configured to assemble the medical data to form data packets;

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C) a processing unit configured to encrypt the packets for decryption by the disassembly structure ~~a remapping unit configured to attach an address to the packets for identifying a disassembly structure~~;

D) a remapping unit configured to attach an address to the packets for identifying a disassembly structure, the address based upon the application entity title ~~a processing unit configured to encrypt the packets across protocol layers for decryption by the disassembly structure~~; and

E) a network interface configured to transmit the packets into a ~~public~~ network for receipt at the disassembly structure.

2. (currently amended) The information transmitter of claim 1, wherein the processing unit is further configured to authenticate the packets ~~across protocol layers~~.

3. (currently amended) The information transmitter of claim 2, wherein the processing unit is further configured to provide key management to the packets ~~across protocol layers~~.

4. (original) The information transmitter of claim 1, wherein the processing unit is configured to encrypt the packets in a manner compliant with IP Security Standards.

5. (original) The information transmitter of claim 1, wherein the processing unit is configured to authenticate and provide key management in a manner compliant with IP Security Standards.

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6. (original) The information transmitter of claim 4, wherein the processing unit is further configured to encapsulate each of the packets into outer packets.

7. (original) The information transmitter of claim 1, further including a firewall.

8. (original) The information transmitter of claim 7, wherein the firewall includes a first network port at the data interface and a second network port at the network interface.

9. (canceled)

10. (currently amended) The information transmitter of claim 1, wherein the attached address ~~is~~ comprises an alias AE title and the remapping unit is configured to attach the alias AE title by:

(i) accepting ~~an AE~~ the application entity title, the application entity title identifying ~~that identifies~~ a receiving station;

(ii) cross-referencing from a relational database, the ~~AE~~ application entity title with the alias AE title ~~that identifies a disassembly structure associated with the receiving station~~; and,

(iii) attaching the alias AE title to the packets.

11. (currently amended) The information transmitter of claim 1, wherein the attached address comprises ~~is~~ an ~~routable~~ IP address ~~and the remapping unit is configured as an NAT to attach the routable IP address by:~~

~~(i) accepting a private IP address that identifies a receiving station;~~

~~(ii) cross-referencing from a relational database, the private IP address with the routable IP address that identifies a disassembly structure associated with the receiving station; and~~

~~(iii) attaching the routable IP address to the packets~~.

12. (currently amended) The information transmitter of claim ~~10~~, further comprising a relational database and an updating unit for adding ~~the~~ alias AE titles to the relational database, each of the alias AE titles correlated to a different disassembly structure, the disassembly structure one of the disassembly structures, the attached address for identifying the disassembly structure comprising one of the AE titles.

13. (original) The information transmitter of claim 12, wherein the updating unit adds the alias AE titles to the relational database by synchronous asymmetric replication.

14. (currently amended) The information transmitter of claim 1, wherein the network comprises at least one networking entity selected from the group consisting of:~~public network comprises~~

conventional telephone lines;~~,~~

ADSL;~~,~~

ISDN;~~,~~

fiber optic cables;~~,~~

ATM network links;~~,~~

DSL connections; and ,

satellite links~~, or a combination thereof~~.

15. (original) The information transmitter of claim 1, wherein the assembly unit is further configured to assemble between 0.1 megabyte and 5.0 megabyte portions of medical data into each of the packets.

16. (original) The information transmitter of claim 1, wherein the assembly unit is further configured to assemble between 50 bytes and 500 bytes portions of medical data into each of the packets.

17. (original) The information transmitter of claim 1, further comprising an acknowledgement unit configured to receive confirmation of completed packet transfers from the disassembly structure within a threshold time.

18. (original) The information transmitter of claim 16, wherein the acknowledgment unit is

further configured to cause the information transmitter to resend only those portions of the data file to which no acknowledgments are received within the threshold time.

19. (currently amended) The information transmitter of claim 1, wherein the medical data file can comprises data having a type selected from the group consisting of:

text;~~,~~

image;~~,~~

overlay;~~,~~

3-D volume;~~,~~

waveform;~~,~~

curve;~~,~~

video;~~,~~ and~~,~~/~~or~~

sound data~~, or any combination thereof~~.

20. (currently amended) The information transmitter of claim 19, wherein the medical data file is of a form conformant with a standard selected from the group consisting of:

the DICOM Standards; and~~,~~/~~or~~

the HL7 Standards.

21. (currently amended) A medical virtual private network system comprising:

A) a medical modality configured to generate medical data and

~~comprising a mapping unit for attaching~~ attach an application

entity title to the medical data for identifying a ~~medical information transmitter~~ receiving station;

B) ~~the~~ a medical information transmitter comprising:

(i) a data interface communicatively coupled to the medical modality for acquiring the medical data from the medical modality;

(ii) an assembly unit configured to assemble the medical data to form data packets;

(iii) a remapping unit configured to attach an address to the packets for identifying a disassembly structure, the address correlated to the application entity title;

(iv) a processing unit configured to encrypt the packets ~~for decryption by the disassembly structure~~; and

(v) a network interface configured to send the packets into a ~~public~~ network ~~for receipt at the disassembly structure~~.

22. (currently amended) The network system of claim 21, wherein the medical modality comprises radiology equipment.

23. (currently amended) The network system of claim 21, further comprising a plurality of medical modalities communicatively coupled to the medical information transmitter.

24. (currently amended) The network system of claim 21, further comprising a disassembly structure communicatively coupled to the medical transmitted via the network, the disassembly structure configured to decrypt the packets.

25. (currently amended) The network system of claim 24, further comprising a plurality of disassembly structures communicatively coupled to the medical transmitted via the network.

26. (original) The network system of claim 24, wherein the disassembly structure is a second medical information transmitter.

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27. (currently amended) The network system of claim 24, ~~further comprising a~~ wherein the receiving station is communicatively coupled to the disassembly structure.

28. (currently amended) The network system of claim 24, further comprising a plurality of receiving stations communicatively coupled to the disassembly structure.

29. (currently amended) A computer readable medium having stored therein a plurality of ~~sequences~~ of instructions, which, when executed by a processor in a transmitter, cause the processor to:

identify an address for a disassembly structure using a parameter that is assigned to a receiving station to which medical data is to be sent;

~~A)~~ assemble packets containing the medical data ~~into packets~~ and information used by the disassembly structure to send the medical data to the receiving station;

encrypting the packets for decryption by the disassembly structure;

~~B)~~ attach ~~an~~ the address for the disassembly structure to the packets ~~for identifying a disassembly structure~~; and,

~~C) encrypt the packets across protocol layers for decryption by the disassembly structure; and~~

~~D) send~~ cause the packets to be sent into a ~~public~~ network for receipt at the disassembly structure.

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30. (currently amended) The computer readable medium of claim 29, further including additional sequences of instructions, which, when executed by the processor, cause the processor to authenticate the packets ~~across protocol layers~~.

31. (currently amended) The computer readable medium of claim 30, further including additional sequences of instructions, which, when executed by the processor, cause the processor to provide key management to the packets ~~across protocol layers~~.

32. (currently amended) The computer readable medium of claim ~~29,~~ ~~wherein the encryption is compliant with IP Security Standards~~31, wherein the authentication and key management are compliant with IP Security Standards.

33. (currently amended) The computer readable medium of claim ~~31,~~ ~~wherein the authentication and key management are compliant with IP Security Standards~~29, wherein the encryption is compliant with IP Security Standards.

34. (currently amended) The computer readable medium of claim 29, wherein the address for the disassembly structure comprises ~~is~~ an alias AE title ~~and the attaching of the address is by:~~

~~(i) accepting an AE title that identifies a receiving station;~~

~~(ii) cross-referencing from a relational database, the AE title with the alias AE title that identifies a disassembly structure associated with the receiving station; and~~

~~(iii) attaching the alias AE title to the packets~~.

35. (currently amended) The computer readable medium of claim 29, wherein the address for the disassembly structure comprises ~~is a routable~~ an IP address ~~and the attaching of the address is by NAT including the steps of:~~

~~(i) accepting a private IP address that identifies a receiving station;~~

~~(ii) cross-referencing from a relational database, the private IP address with the routable IP address that identifies a disassembly structure associated with the receiving station; and~~

~~(iii) attaching the routable IP address to the packets~~.

36. ~~Computer readable instructions, which when executed cause a processor to:~~

~~A) assemble medical data into packets;~~

~~B) attach an address to the packets for identifying a disassembly structure;~~

~~C) encrypt the packets across protocol layers for decryption by the disassembly structure; and~~

~~D) send the packets into a network for receipt at the disassembly structure.~~

(currently amended) The computer readable medium of claim 29, wherein the medical data is DICOM compliant prior to the encrypting.

37. (currently amended) The computer readable ~~instructions~~ medium of claim ~~36~~29, wherein ~~the address is an alias~~ the parameter comprises an AE title ~~and the attaching of the address is by:~~

~~(i) accepting an AE title that identifies a receiving station;~~

~~(ii) cross-referencing from a relational database, the AE title with the alias AE title that identifies a disassembly structure associated with the receiving station; and~~

~~(iii) attaching the alias AE title to the packets~~.

38. (currently amended) The computer readable ~~instructions~~ medium of claim ~~36~~29, wherein the ~~address is a routable IP address and the attaching of the address is by NA T including the steps of:~~

~~(i) accepting a private IP address that identifies a receiving station;~~

~~(ii) cross-referencing from a relational database, the~~ parameter comprises a private IP address ~~with the routable IP address that identifies a disassembly structure associated with the receiving station; and~~

~~(iii) attaching the routable IP address to the packets~~.

39. (currently amended) A method, comprising ~~the steps of~~:

identifying an address for a disassembly structure using a parameter that is assigned to a receiving station to which medical data is to be sent;

~~A)~~ assembling packets containing the medical data ~~into packets~~ and information used by the disassembly structure to send the medical data to the receiving station;

encrypting the packets for decryption by the disassembly structure;

~~B)~~ attaching ~~an~~ the address for the disassembly structure to the packets ~~for identifying a disassembly structure~~; and,

~~C) encrypting the packets across protocol layers for decryption by the disassembly structure; and~~

~~D) sending~~ causing the packets to be sent into a ~~public~~ network for receipt at the disassembly structure.

40. (currently amended) The method of claim 39~~,~~ further ~~including the step of~~ comprising compressing the packets using at least one compression technique selected from the group consisting of:

~~a~~ wavelet,

~~a~~ motion wavelet,

~~an~~ MPEG,

~~a~~ motion JPEG,

~~a~~ Lempel Ziv; and, ~~or~~

fractal ~~compression scheme~~.

41. (currently amended) The method of claim 39, wherein the ~~step of~~ encrypting is compliant with IPSec Standards.

42. (currently amended) The method of claim 41~~2~~, further ~~including the step of~~ comprising encapsulating the packet into an outer packet.

43. (currently amended) The method of claim 42~~3~~, wherein the outer packet includes an encryption field.

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44. (currently amended) The method of claim 39, wherein the address for the disassembly structure ~~is~~ comprises an alias AE title ~~and the attaching of the address includes the steps of:~~

~~(i) accepting an AE title that identifies a receiving station;~~

~~(ii) cross-referencing from a relational database, the AE title with the alias AE title that identifies a disassembly structure associated with the receiving station; and~~

~~(iii) attaching the alias AE title to the packets~~.

45. (currently amended) The method of claim 39, wherein the address for the disassembly structure comprises an ~~is a routable~~ IP address ~~and the attaching of the address is by NAT and includes the steps of:~~

~~(i) accepting a private IP address that identifies a receiving station;~~

~~(ii) cross-referencing from a relational database, the private IP address with the routable IP address that identifies a disassembly structure associated with the receiving station; and~~

~~(iii) attaching the routable IP address to the packets~~.

46. (currently amended) The method of claim 39, further ~~including the step of~~ comprising converting the medical data to be compliant with the

DICOM Standards after the packets are received at the disassembly structure.

47. (currently amended) ~~A method of transmitting medical information comprising:~~

~~A) assembling a medical data file into packets;~~

~~B) sending the packets into a public network for receipt at a disassembly structure;~~

~~C) considering whether an acknowledgement of completed packet transfer is received from the disassembly structure within a threshold time; and~~

~~D) resending into the public network only that portion of the medical data file to which no acknowledgment is received within the threshold time~~ The method of claim 39 wherein the parameter further comprises an AE title.

48. (currently amended) ~~The method of claim 48, wherein between 0.1 megabytes and 5.0 megabytes of medical data is assembled into each packet~~ The method of claim 39 wherein the parameter further comprises a private IP address.

49. (currently amended) A method acquiring medical information comprising:

at a same network node:

~~A)~~ receiving packets comprising medical information ~~sent by~~ sent by a transmitter across a public network;

~~B)~~ sending acknowledgments of successful transfer to the transmitter;

~~C)~~ decrypting the packet<u>s</u> to reveal an address of a receiving station;

<u>converting the medical information to be compliant with the DICOM Standards after the receiving; and,</u>

~~D)~~ transferring the medical information to the receiving station.

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50. (currently amended) The method of claim 4~~9~~<u>50</u>, wherein the revealed address is an AE title of a receiving station.

51. (canceled).

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52. (new) A method of transmitting medical information comprising:

assembling a medical data file into packets;

sending the packets into a public network for receipt at a disassembly structure;

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considering whether an acknowledgement of completed packet transfer is received from the disassembly structure within a threshold time; and

resending into the public network only that portion of the medical data file to which no acknowledgment is received within the threshold time.

53. (new) The method of claim 52, wherein between 0.1 megabytes and 5.0 megabytes of medical data is assembled into each packet.

54. (new) Stored in a computer readable format, computer executable instructions which when executed cause a method to be performed, the method comprising:

recognizing the identity of a receiving station that is to receive medical data;

identifying a disassembly structure from the identity of the receiving structure; and,

preparing packets containing the medical data and causing the packets to be sent via a network to the disassembly structure, the preparing comprising attempting to secure the medical data for its transportation over the network by applying to the medical data at least one security technique selected from the group consisting of

encryption;

authentication; and,

key management.

55. (new) The stored computer readable and executable instructions of claim 54 wherein the recognizing comprises recognizing the identity of the receiving station based upon the medical data's content.

56. (new) The stored computer readable and executable instructions of claim 54 wherein the medical data is received with the identity of the receiving station.

57. (new) The stored computer readable and executable instructions of claim 56 wherein the identity of the receiving station comprises an IP network address.

58. (new) The stored computer readable and executable instructions of claim 57 wherein the IP network address is a private IP network address.

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59. (new) The stored computer readable and executable instructions of claim 56 wherein the identity of the receiving station comprises an AE title.

60. (new) The stored computer readable and executable instructions of claim 54 wherein the medical data is in a DICOM compatible format prior to the applying.

61. (new) The stored computer readable and executable instructions of claim 54 wherein the applying further comprises applying an IPSec security technique.

62. (new) The stored computer readable and executable instructions of claim 54 wherein the applying further comprises applying an SSL security technique.

63. (new) The stored computer readable instructions of claim 54 wherein the preparing further comprises preparing between 0.1 megabyte and 5.0 megabyte portions of medical data into each of the packets.

64. (new) The stored computer readable instructions of claim 54 where the method further comprises receiving confirmation of completed packet transfers from the disassembly structure within a threshold time.

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65. (new) The stored computer readable instructions of claim 64 wherein the method further comprises causing a resend of those portions of the medical data to which no acknowledgments are received within the threshold time.